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5

Docket No. UF-322XC1  
Serial No. 10/632,598Remarks

Claims 1-32 were pending in the subject application. By this Amendment, claims 27-32 have been withdrawn. The specification has been amended to correct typographical errors and to add reference numbers corresponding to reference numbers added to the Figures. The undersigned avers that no new matter is introduced by this amendment. Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 1-26 are currently pending in the subject application. Favorable consideration of the pending claims is earnestly solicited.

Applicants affirm the election of Group I method, claims 1-26 in response to the restriction requirement. Accordingly, claims 27-32 have been withdrawn.

Figures 1 and 2 have been object to. The Office Action indicates Figure 1 and 2 should be designated by a legend such as Prior Art. Figures 1 and 2 have been amended to designate Figures 1 and 2 as prior art. The drawings have been object to because there are no reference numbers in Figure 1, 3, and 8. In accordance with the Examiner's suggestion, reference numbers have replaced text in Figures 1, 3, and 8.

The Specification has been amended to include the reference numbers introduced for Figures 1, 3, and 8. In addition, reference numbers have been introduced at page 3, lines 11-13 and at page 6, lines 9-10 for the discussion of Figures 3 and 4 as recommended by the Examiner at page 4 of the Office Action. The applicants wish to thank the Examiner for his careful reading of the subject application.

The Specification at page 3, line 11 has been amended to correct typographical errors. Specifically, page 3, line 11 has been amended to include commas after "applying" and after "silicon".

Claims 1, 3, 4, 9-10, and 12-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Okabe *et al.* (U.S. Patent No. 6,280,799). The applicants respectfully traverse this grounds for rejection. The Office Action acknowledges that Okabe *et al.* reference is silent with respect to spark. The Office Action further states that, regarding claim 1, the Okabe *et al.* reference teaches "voltage applied to electrode 14, a medium 16 as a counter electrode, AC or DC voltage, the applied range for AC is 100V to 20KV, and a frequency of discharge of 1 Hz to 1000kHz, all amount to a spark processing, since a discharge passes between the electrode and the medium 16". The

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Docket No. UF-322XC1

Serial No. 10/632,598

Office Action then states “is therefore a method for spark-processing silicon comprising: applying to silicon sparks of sufficiently high voltage to effect the production of spark-processed, wherein applying to the silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon creates a spark plasma”. However, the Okabe *et al.* reference does not teach or suggest applying to silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon, wherein applying to the silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon creates a spark plasma. Rather, the Okabe *et al.* reference teaches away from applying sparks. At column 11, lines 24-30, the Okabe *et al.* reference teaches “[h]owever, if the medium 16 is made of a material having a high electric conductivity such as a metal, the electrode must be spaced a sufficient distance apart from the surface of the medium 16 because it is possible that a discharge passes between the electrode and the medium 16 or an excessively high current flows through the discharged viscous substance. Accordingly, it appears that the Okabe *et al.* reference is teaching that the electrode must be spaced a sufficient distance apart from the surface of the medium 16 so as to prevent sparking. Further support for such teaching away from applying sparks can be found at column 10, lines 25-32, where the Okabe *et al.* reference teaches “preventing discharge” and at column 7, lines 36-52, where the Okabe *et al.* reference teaches that the electric conductivity of the liquid is preferably in the range of  $10^{-10}$  to  $10^{-4} \Omega^{-1} \text{cm}^{-1}$  because “if the liquid has an electric conductivity beyond the upper limit of the foregoing range, the potential on the surface of the liquid is high and hence discharges are liable to occur across air between the liquid, and parts around the liquid and the surface of the medium”.

In this way, if one were to modify the teaching of the Okabe *et al.* reference to arrive at a method involving applying sparks then the method would not be satisfactory for its intended purpose. “If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Further, the Okabe *et al.* reference does not teach a medium 16 of silicon. Rather, as the Office Action points out, the Okabe *et al.* reference teaches, at column 3, line 47-49, the viscous substance contains at least glass powder.” However, even if sparks were applied, which the Okabe *et al.* reference does not teach, spark-processed silicon would not result. Therefore, the Okabe *et al.*

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7

Docket No. UF-322XC1  
Serial No. 10/632,598

reference does not teach or suggest a method for spark-processing silicon, comprising applying to silicon sparks of such sufficiently high voltage to effect the production of spark-processed silicon creates a spark plasma. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 3, 4, 9-10, and 12-19 under 35 U.S.C. §103(a).

Claims 2, 20, 23, 24, and 26 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Okabe *et al.* in view of St. John *et al.* "Formation of europium oxide structures on crystalline silicon by spark processing" Proceedings of the Intl Sym. On Advanced Luminescent Materials. Chicago, IL, Electrochemical Society Proceedings 92-25, pp.423-431. The applicants respectfully traverse this grounds for rejection

The limitations of the Okabe *et al.* reference have been discussed with respect to the rejection of claim 1 above. The St. John *et al.* reference does not cure these defects. Referring to the Okabe *et al.* reference at column 3, lines 40-46, the Okabe *et al.* reference teaches that "the viscous substance discharging method is used for fabricating ..., electroluminescence display panels." However, the Okabe *et al.* reference does not teach a method that enhances the electroluminescence of the spark-processed silicon. In fact, the Okabe *et al.* does not produce spark-processed silicon and does not teach enhancement of any material's electroluminescence. At column 9, lines 13-23, the Okabe *et al.* reference does not teach substances deposited for the display panels using spark-processing. As discussed above, the Okabe *et al.* reference does not teach or suggest applying sparks. The St. John's reference teaches spark processing in air. Therefore, a *prima facie* case of obviousness has not been presented. There would be no motivation to combine the teachings of the cited references to arrive at the subject invention as claimed in claims 2, 20, 23-24, and 26. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 2, 20, 23, 24, and 26 under 35 U.S.C. §103(a).

Claim 11 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Okabe *et al.* in view of Sakaguchi *et al.* (U.S. Patent No. 6,316,062). The applicants respectfully traverse this grounds for rejection. The limitation of the Okabe *et al.* reference has been discussed above with respect to the rejection of claims 1 and 20. The Sakaguchi *et al.* reference does not cure these defects. Therefore, a *prima facie* case of obviousness has not been presented. Accordingly, the

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8

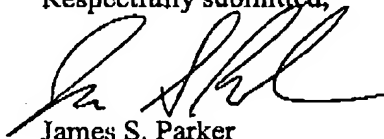
Docket No. UF-322XC1  
Serial No. 10/632,598

applicant respectfully requests reconsideration and withdrawal of the rejection of claim 11 under 35 U.S.C. §103(a).

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 or 1.17 as required by this paper to Deposit Account 19-0065.

The applicants invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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Attachments: 1. Amended Figures 1, 2, 3 and 8.

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